APPLICATION NUMBER 5-
Salt Lake City
Project Title: Miller Park Bird Refuge Restoration Project

UTAH DIVISION OF WATER QUALITY
195 North 1950 West
PO Box 144870
Salt Lake City, Utah 84114-4870

Red Butte Creek Project Proposal Form

NOTE: Proposal must be no longer than 6 pages. Supplemental documents such as letters of support, information to demonstrate previous project implementation and other relative supportive documents may be submitted in addition to this form.

Applicant Name: Salt Lake City Corporation

Co-Applicant Name (if applicable): _____

Agency or Business Name (if applicable): Salt Lake City Department of Public Services

Mailing Address: P.O. Box 145470 City: Salt Lake City State: UT Zip: 84114-5470

Phone: (801) 535 - 7774 E-mail: rick.graham@slcgov.com

☐ Individual ☐ Non Profit ☑ Govt. Agency ☐ Business ☐Commercial ☐ Other

1. Estimated Project Costs:

Labor	$ 858,966
Materials	$ Included in Labor
Equipment	$ 0
Administration	$ 5,000
Miscellaneous	$ 203,646
TOTAL	$ 1,067,612
Total grant request	**$ $767,612**

Other sources of project funding

SLC Dept. Public Utilities	$300,000	_____	$0
Source	Amount	Source	Amount
_____	$0	_____	$0
Source	Amount	Source	Amount
_____	$0	_____	$0
Source	Amount	Source	Amount
_____	$0	_____	$0
Source	Amount	Source	Amount

Total project cost including other sources of funding: $ 1,067,612
(please include bids for labor, equipment, rentals, etc.)

2. Describe the purpose and need of the project:

Purpose. The Miller Park Bird Refuge Restoration Project is the restoration of a 3,044 foot stretch of Red Butte Creek with the goal to improve the ecosystem functions that will support the highest level of riparian ecosystem services and the public's experience. The proposed riparian restoration in the Miller Park Bird Refuge is an opportunity to bring a section of degraded riparian habitat that was affected by the Red Butte Creek release back to a healthy ecosystem with natural function and a predominance of native plant and wildlife species. The proposed project will serve as a significant restoration demonstration project on Red Butte Cree that will improve conditions for water quality, wildlife species (macroinvertebrates, fish, and birds), and critical habitat along Red Butte Creek through the restoration of riparian forest complex, upland grassland, and upland shrubland habitats. The restoration project will serve the public through ecological, recreation, and cultural benefits. Ecological benefits will include improved water quality and improved wildlife habitats. Recreation benefits will include an enhanced park experience including wildlife viewing opportunities. Cultural benefits will include restoration of a unique riparian site on public land with local historical and environmental significance. Streams and riparian areas are unique and highly important elements of Utah's landscape, and riparian corridors function as complex interdependent ecosystems. Lowland river and stream banks are rare in Utah, covering just 0.2 percent of the state[1] and 1.2 percent of Salt Lake City's land area.[2]

Need. Miller Park Bird Refuge was highly impacted by the Red Butte Creek Oil release due to its close proximity to the point of release (1.75 miles downstream of the release). The oil released to the creek directly and negatively impacted wildlife species (macro-invertebrates, fish, and birds) and their critical habitat along this stretch of the riparian corridor. Substantial erosion of the banks and streambed resulted from the physical impacts of vegetation damage, pressure washing and crew activity in and along the creek during the clean-up. Erosion of the stream banks will continue to occur unless a more significant and effective approach to stabilization is exercised. In addition, this popular public bird refuge and park was closed to public use for months after the oil release and has not recovered its former riparian characteristics due to significant removal of understory habitat and reported slow re-occupation by bird species disrupted last summer. The proposed Miller Park Bird Refuge Restoration Project is an opportunity to bring the area to optimal conditions for improved public access to wildlife watching and passive recreation and to improve the conditions for wildlife, habitat, native vegetation and water quality.

Historical Significance. In addition to the natural ecosystem functions of Red Butte Creek, the site's cultural ecosystem services have connections to the settling of the Salt Lake valley by early pioneers. Miller Park Bird Refuge was donated to the city as a bird refuge and in 1998 the Utah State Society Daughters of the American Revolution placed a plaque at the entrance of Miller Park Bird Refuge recounting the story of the creek's role in the Mormon cricket "invasion." Red Butte Creek flows southwest from the Wasatch Mountains through the linear park now known as Miller Park Bird Refuge. Red Butte Creek was one of the creeks in the Salt Lake Valley that helped to take the "hop" out of the grasshoppers in that historic battle. "Armed with sacks and willow branches," history records, "local residents forced the grasshoppers into the creek's current, which carried the pests to sieves that trapped them and enabled people to destroy them." In addition, Miller Park Bird Refuge also contains a bridge and walls built by the Work Project Administration, which embody American craftsmanship and the value of public works in public lands. The proposed Miller Park Bird Refuge Restoration Project is an opportunity to preserve the unique cultural ecosystem service that the site provides to the local community.

3. Estimate time frame of the project with significant milestones (Note: Project must be completed with final reports filed by November 10, 2014).

The estimated time frame for the Miler Park Bird Refuge Restoration is 33 months (2.75 years) with a start date of February 2012 and a completion date of October 2014.

Interim Milestones	Start Date	Completion Date
Develop qualified consultant list	February 2012	February 2012
Issue RFP to qualified consultant list	February 2012	March 2012
Select riparian design consultant	March 2012	April 2012
Final design and specification documents	April 2012	June 2012
Issue RFP to qualified consultant list	July 2012	September 2012
Select riparian restoration specialist	September 2012	September 2012
Permits, due diligence, and public outreach (Phase 1)	October 2012	February 2013
Riparian restoration site work	March 2013	September 2013
Conduct public outreach (Phase 2)	May 2013	September 2013
Fall planting	October 2013	November 2013
Spring planting	April 2014	May 2014
Fall planting	October 2014	October 2014

4. Describe the location of the project with attached location map, including details on the total area that will be directly enhanced by the project:

Miller Park Bird Refuge is a southwest-oriented riparian corridor at 900 South between 1500 East and 1700 East in Salt Lake City, Utah. A gated north entrance to the Miller Park Bird Refuge is on the south side of 900 South at about 1700 East, which is between Diestel Road to the west and Military Drive to the east. The southern entrance is off of Bonneview Dr., through Bonneville Glen located at the corner of 1500 East and 1050 South (Bonneview Drive). The path off Bonneview Dr. connects through Bonneville Glen to the Miller Park Bird Refuge. Paths on both sides of Red Butte Creek run through a heavily vegetated gully for about four blocks from the north entrance (Miller Park Bird Refuge) to the southwest entrance (Bonneville Glen). There are several bridges crossing the stream and several overlooks. The total area that will be directly enhanced by the proposed project is 4.75 acres.

5. Describe how the project will specifically enhance and protect waterways affected by the Red Butte release and improve the conditions of one or more of the following: wildlife, habitat, natural vegetation, water quality or emergency response:

Waterway Protection. The Miller Park Bird Refuge Restoration Project will enhance and protect the important lowland riparian corridor of Red Butte Creek by restoring a section of degraded riparian habitat to a healthy ecosystem with natural function and a predominance of native plant and wildlife species. Red Butte Creek is a major tributary of the hydrologic system connecting water flows from the Wasatch Mountains to the Jordan River and the Great Salt Lake. The conservation and restoration of this critical riparian stretch through public land supports the ecosystem services to the urban core and allows for continued public access and education. The waterway protection of Red Butte Creek will be supported through several public outreach efforts included in the proposed restoration plan. The public outreach will engage and educate the public on this valuable riparian resource and promote opportunities for the public's participation in the long-term stewardship of this conserved public land.

Improved Conditions for Wildlife. Macroinvertebrates, fish, and avian species will benefit from the restoration and habitat improvements proposed for Miller Park Bird Refuge. In particular, neo-tropical migratory birds, such as Hairy Woodpecker, warblers, and Black-headed Grosbeak, will

have increased access to critical habitat that supports nesting, feeding, and shelter. Wildlife is inextricably connected to the quality and availability of habitat. The critical ecological role of riparian habitat is disproportionate to their small size. Riparian areas occupy just 0.2% of the state[1] and 1.2 percent of Salt Lake City's land area[2]. In Utah, approximately 75% of the state's bird species rely on riparian habitat [3]. In the western United States, up to 80% of all mammal and bird species rely on riparian corridors for some part of their lifecycle [3]. The existing street-like lighting of Miller Bird Refuge is outdated and is inappropriate to support a high-functioning bird habitat and is proposed to be removed as part of this project and replaced with appropriate lighting.

Improved Conditions for Habitat and Natural Vegetation. The habitat is primarily complex riparian vegetation including tree canopy, understory vegetation, and upland grasses, shrubs, and trees on the steep banks of the larger gully containing the riparian corridor. The area is currently deficient in understory vegetation and needs control of noxious and non-native grasses and forbs. The gully is covered in steep-sloped riparian woodland with diverse tree species of mainly Black Locust, Scrub Oak, ash, maple and Box Elder trees with some dispersed junipers. The project will increase native plant populations by restoring the following critical habitat zones:

1) Riparian Forest Complex (2.79 acres): The riparian forest structure will be restored through the control of non-native species and planting with a native plant palette of trees, shrubs, forbs and grasses that creates a structurally complex, species-rich habitat.

2) Upland Grassland (0.6 acre): The upland grasslands restoration will involve the removal of the non-native grass and forb species by appropriate chemical and/or mechanical methods followed by planting and seeding with native and desirable grasses and forbs.

3) Upland Shrubland (1.36 acres): The upland shrubland restoration will involve the removal of non-native species by appropriate chemical and/or mechanical methods followed by planting and seeding with native and desirable shrubs.

Improved Conditions for Water Quality. Water quality will be addressed through soil stabilization, erosion control, prevention of nutrient loading, and implementation of other best management practices. Physical soil stabilization of 3,044 linear feet of stream bank will be achieved through increasing vegetation cover and erosion control fabric and will result in reduced sediment loads to the creek bed and reduced total suspended solids in the water column. Vegetative streambanks between the public access trail and the creek will filter nutrient loads, particulate matter, and other potential pollutants from entering the stream. The access trails will be stabilized and appropriate trail treatments and retaining walls will be installed for strategic draining to reduce erosion and prevent sediment loading from the trails. Mechanized trash removal through volunteer clean-ups organized by Salt Lake City Parks and Public Lands Division will further improve water quality.

6. Describe project's connectivity to other natural areas or projects that further enhance wildlife, habitat, natural vegetation, water quality or emergency response:

Physical Connectivity. The linear nature of the Red Butte Creek corridor is a natural travel route for fish, birds, mammals, and other aquatic and terrestrial species. The location of Red Butte Creek

[1] State of Utah Natural Resources Division of Wildlife Resources. 2005. Utah Comprehensive Wildlife Conservation Strategy. Pg K-2.
[2] Salt Lake City. 2010. Salt Lake City Riparian Corridor Study: Final Red Butte Creek Management Plan. Pg 1-4.
[3] Krueper D.J. 1993. Effects of land use practices on western riparian ecosystems in status and management of neotropical migratory birds. *In*: Finch D.M., Stangel P.W., editors. Status and management of neotropical migratory birds. General technical report RM-229. Fort Collins (CO): U.S. Forest Service. p. 331–338.

within the urban core of Salt Lake City makes it a key longitudinal connection between habitats in the Wasatch Mountains and habitats in the valley floor, including the Jordan River and the Great Salt Lake. The habitat importance of Red Butte Creek is enhanced because the significance of riparian areas and proximity to the Great Salt Lake, which is an ecosystem of hemispheric significance in terms of providing resting, staging, and nesting habitat for migratory bird populations. Therefore, improved habitat quality along Red Butte Creek has a direct impact on site as well as other natural areas between the Wasatch Mountains and the Great Salt Lake.

Planning Connectivity. The proposed scope and projected costs of the Miller Park Bird Refuge Restoration Project are based on recommendations for specific stream reaches within the Red Butte Creek riparian corridor set forth in the *Final Red Butte Creek Management Plan.* The City completed the *Final Red Butte Creek Management Plan* in February 2010 as part of the *Salt Lake City Riparian Corridor Study*. The study outlines a continuity of high-quality riparian restoration and stewardship derived from baseline stream and vegetation conditions assessments of the four creeks within Salt Lake City's municipal boundaries (City, Emigration, Parleys, and Red Butte).

7. Describe any additional social benefits of implementing this project:

The social benefits from implementing the Miller Park Bird Refuge include opportunities for the public and adjacent residential property owners to: 1) engage with a high quality riparian experience; 2) learn about the unique riparian processes; 3) engage in active and passive outdoor recreation; and 4) find respite from the urban landscape. The site has been a fixture in the local community functioning as an important pocket of green space within an otherwise urbanized city environment. The relatively lush, green, tall vegetation within the riparian corridor is visually distinct from the remainder of the city's landscape and has a unique aesthetic value due to the pleasing and calming sound of flowing water. As part of the proposed restoration project, structural repairs will be made to the historic bridges and stone walls at the entrance of Miller Park Bird Refuge. The repairs will preserve the cultural amenities of the park and will provide the public with safe bird and wildlife vantage points. The proposed restoration project will ensure the aesthetic and social functions of Miller Park Bird Refuge continue to serve as valued amenities for the stream corridor, the general public, and for adjacent and downstream properties.

8. Project plans and details, including rights to work on specified piece(s) of land:

A discussion of the proposed scope of restoration work is provided above in the response to Question 5. A detailed conceptual plan is attached. If the project grant is awarded, the City will secure the services of a qualified riparian restoration design consultant to draw up final detailed design plans and restoration specifications. In addition, the City will secure the services of a qualified riparian restoration specialist to conduct the site restoration work. The City owns and operates Miller Park Bird Refuge and has the right to conduct work on the property. As with all projects that could affect a riparian system or flood plain, the City will coordinate interdepartmentally and with appropriate jurisdictions to secure any necessary permits.

9. Describe your experience in implementing projects of similar scope and magnitude:

The City is currently in the process of implementing three restoration projects of similar scope and magnitude: 1) City Creek Canyon (100-acre restoration); 2) Wasatch Hollow Open Space (10-acre restoration); and 3) Parley's Historic Nature Park (63-acre restoration). Additionally, the City recently completed stream bank re-grading and establishment of native habitat at four restoration sites along the Jordan River with funding from the State Division of Water Quality. The Miller Park Bird Refuge Restoration will be overseen by the City's Parks and Public Lands Division and

City's Department of Public Services in collaboration with the City's Department of Public Utilities. With the inter-department collaboration, the project will have access to professionals within each department with experience in riparian restoration, open lands management, and implementing water quality best management practices. The project budget was developed with cost effectiveness in mind and based on local rates for professional services. The City's Department of Public Utilities is leveraging $300,000 toward the proposed restoration and will request the allocation of funds from Salt Lake City Council upon selection and awarding of funds by Utah Division of Water Quality.

10. Describe how ongoing maintenance of the project will be funded and carried out:

The City maintains Miller Park Bird Refuge as part of general operations of the City's Parks and Public Lands Division. Current maintenance of the park incorporates best-management practices that the City uses to actively steward the 2,574 acres of parks and open space within its municipal boundaries. The City anticipates that the level of maintenance for Miller Park Bird Refuge will increase for ongoing stewardship of the restoration and site enhancements and for annual monitoring of the restoration improvements. Restoration maintenance will include replacing plants, replacing irrigation parts, weeding, monitoring, and/or other site modifications required to ensure that the restoration work is healthy into the future. On-going monitoring and management of noxious and invasive weeds will follow strategies outlined in the City's Integrated Pest Management Plan. The City will budget for the expanded level of maintenance and monitoring for the site beyond the grant period through the City's Parks and Public Lands Division annual budget.

11. List consultants or agency partners that have participated in project development (below):

Name/Company	Address	Phone
None		
None		

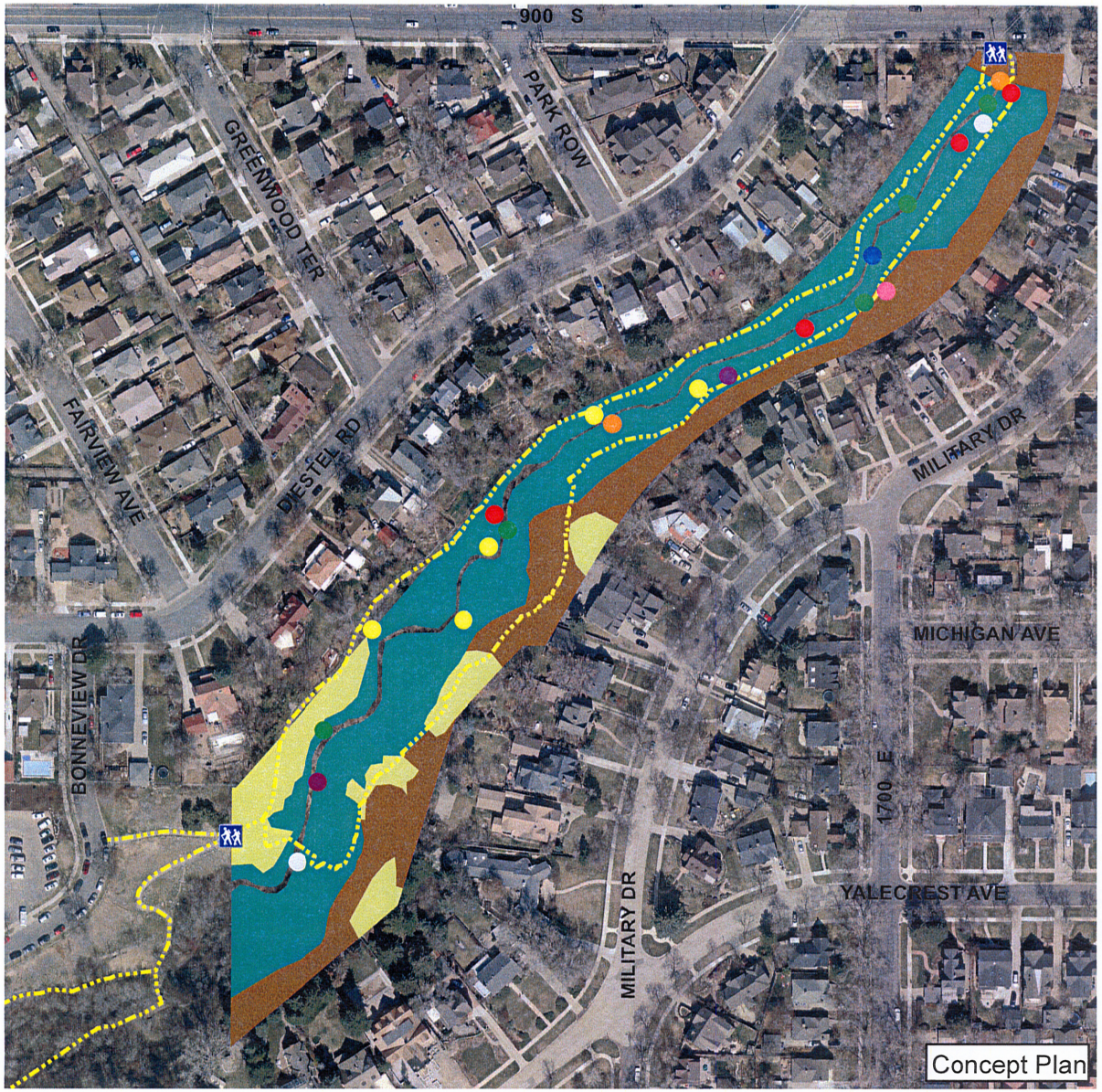
I am willing to: (1) comply with all applicable laws and work with designated technical personnel as assigned to the above–referenced project in preparation of project implementation; (2) submit detailed project information to the Utah Division of Water Quality as requested to evaluate water quality improvements; (3) not to apply any practices which would tend to defeat the purpose of the project; and (4) allow continued monitoring and evaluation of the project activities implemented on my property.

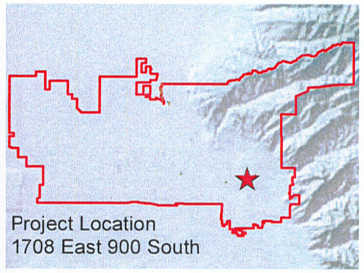
Signature Alli Graham Date 12-13-11
Applicant

Signature _____ Date _____
Co-Applicant (if applicable)

[i] State of Utah Natural Resources Division of Wildlife Resources. 2005. Utah Comprehensive Wildlife Conservation Strategy. Pg K-2.
[ii] Salt Lake City. 2010. Salt Lake city Riparian Corridor Study: Final Red Butte Creek Management Plan. Pg 1-4.

APPROVED AS TO FORM
Salt Lake City Attorney's Office
Date 12/13/11
By





Miller Park Bird Refuge

Legend

- Access Point
- Bank Treatment
- Culvert/Bridge/Pipe Crossing
- Eroded Access Trail
- General Erosion
- In Channel Structure
- In Channel Structures
- Litter Areas
- Stream Cross Sections
- Stream Velocity Mitigation
- Miller Park Trail 0.65 mi.
- Riparian Forest Complex-2.79 ac.
- Upland Grassland-0.6 ac.
- Upland Shrubland-1.36 ac.

NORTH

0 75 150 300 Feet

Miller Park Bird Refuge Restoration Project Budget

Category	Cost Detail / Scope of Work	Requested Amount	Salt Lake City Leverage (not yet allocated)	Project Total
Personnel				
Grants Program Administrator	$27.60 per hour x 181.17 hours	$5,000	$0	$5,000
Total Personnel		**$5,000**	**$0**	**$5,000**
Fringe Benefits				
None.	None.	$0	$0	$0
Travel				
None.	None.	$0	$0	$0
Equipment				
None.	None.	$0	$0	$0
Materials and Supplies				
None.	None.	$0	$0	$0
Contractual	*Scope of Work* *			
Riparian Designer	To include developing schematic design and creating restoration specifications and plans. Calculation based on 10% of riparian restoration.	$78,088	$0	$78,088
	Total Riparian Designer	**$78,088**	**$0**	**$78,088**
Site Preparation	To include: 1) installation of temporary access control fencing; 2) trail treatment and strategic retaining; 3) removal of partial rock wall and in-stream structure; 4) retrofit of irrigation system; 5) electrical supply for irrigation system and lighting; 6) removal of existing utility poles and attached lamps; 7) installation of bird refuge appropriate lighting; and 8) repair of historic structures.	$248,830	$67,760	$316,590

Miller Park Bird Refuge Restoration Project Budget

Category		Cost Detail / Scope of Work	Requested Amount	Salt Lake City Leverage (not yet allocated)	Project Total
	Habitat Restoration	To include invasive plant removal and planting of least three native riparian habitat to include the following: 1) forest complex, 2) upland grass and 3) upland shrub. Total acreage estimated at 4.75 acres.	$141,048	$0	$141,048
	Streambank Restoration	To include: 1) bank stabilization; 2) stream velocity mitigation; 3) grade control; 4) culvert outlet protection at 900 South crossing; and 5) mechanized trash removal.	$76,000	$232,240	$308,240
	Permitting		$15,000	$0	$15,000
		Total Riparian Restoration Specialist	**$480,878**	**$300,000**	**$780,878**
	Total Contractual		**$558,966**	**$300,000**	**$858,966**
Other					
	Contingency	15% of riparian restoration	$117,132	$0	$117,132
	Design Oversight	2% of riparian restoration	$15,618	$0	$15,618
	Restoration Oversight	6% of riparian restoration	$46,853	$0	$46,853
	Restoration Establishment	3% of riparian restoration specialist	$14,426	$0	$14,426
	Public Outreach	To include: 1) website development and updating; 2) onsite signage; and 3) educational materials. Calculation 2% of riparian restoration specialist.	$9,618	$0	$9,618
	Total Other		**$203,646**	**$0**	**$203,646**
		Total Miller Park Bird Refuge	**$767,612**	**$300,000**	**$1,067,612**

* Estimated costs include materials and installation/labor.